

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)  
Current Human Exposures Under Control**

**Facility Name:** International Paper, Inc. – Non-Treated Wood Products (TWP) Area  
**Facility Address:** 10 International Way, Longview, Washington  
**Facility EPA ID #:** WAD 010745917

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

If yes - check here and continue with #2 below.

If no - re-evaluate existing data, or

if data are not available skip to #6 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future. —

**Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **“contaminated”**<sup>1</sup> above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	<u>    </u>	<u>    </u>	<b>See below</b>
Air (indoors) <sup>2</sup>	<u>    </u>	<u>X</u>	<u>    </u>	
Surface Soil (e.g., <2 ft)	<u>X</u>	<u>    </u>	<u>    </u>	<b>See below</b>
Surface Water	<u>    </u>	<u>X</u>	<u>    </u>	
Sediment	<u>    </u>	<u>X</u>	<u>    </u>	
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	<u>    </u>	<u>    </u>	<b>See below</b>
Air (outdoors)	<u>    </u>	<u>X</u>	<u>    </u>	

     If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

     If unknown (for any media) - skip to #6 and enter “IN” status code.

**Rationale and Reference(s):** The former International Paper facility was located on the north side of the Columbia River, approximately 66 miles upriver from the Pacific Ocean. The former facility is located less than two miles downstream of the confluence of the Columbia and Cowlitz rivers. The former facility lies within the 100-year floodplain but is protected by control levees.

International Paper operated a wood treatment facility at this location from 1956 to 1983. The Treated Wood Product (TWP) area, the site of the former wood treatment operation at the former southwestern corner of the International Paper facility, encompassed the retort building, associated structures (e.g., tanks, sheds, water treatment facilities, and the locations of former Ponds 1 and 2). The original International Paper facility was approximately 900 acres. The former TWP area consists of approximately 4 acres; the rest of the original International Paper facility is called the non-TWP area and includes a number of solid waste management units (SWMUs) and areas of concern (AOCs) identified in the 1991 RCRA facility assessment (RFA) report.

SWMU 6 (Site C) is located at the eastern edge of the former International Paper facility and was reportedly used for the disposal of various wastes and liquids. International Paper investigated Site C in October 1996. The investigation determined that there were residual concentrations of carcinogenic polycyclic aromatic hydrocarbon (cPAH) compounds, pentachlorophenol, bis(2-ethylhexyl)phthalate, arsenic, barium, and copper in soil at concentrations exceeding MTCA residential groundwater protection standards. Levels of arsenic and bis(2-ethylhexyl)phthalate in groundwater exceeded MTCA residential groundwater standards. Based on the results of that investigation and subsequent groundwater modeling that indicated that MTCA residential groundwater standards would not be exceeded at the boundary of Site C, Ecology determined that a deed restriction was required to prohibit extraction of groundwater in the vicinity of Site C. The deed restriction was filed with the Cowlitz County auditor in February 2000.

International Paper investigated AOC 23, a former below-grade concrete enclosure located within the foundation of the former flakeboard plant building, in November 1996. The results of field screening tests

indicated that some soil filling the concrete enclosure had concentrations of total petroleum hydrocarbon (TPH) compounds above the current MTCA Method A industrial soil cleanup level. The soil within the concrete enclosure was excavated and disposed of at an appropriate offsite location.

International Paper investigated SWMU 30, the former site of two aboveground storage tanks within an unlined concrete bermed area, in 1994 and 1996. The results of investigations indicated that TPH compounds above MTCA Method A industrial soil cleanup level were present in surface soils. Soils inside and surrounding the bermed area were excavated in November 1996 and disposed of at an appropriate offsite location. Verification samples were collected from the excavation areas and analyzed for total recoverable petroleum hydrocarbons (TRPH) by Ecology Method WTPH-418.1. The concentrations of TRPH compounds in the verification samples were all less than 50 mg/kg.

International Paper investigated SWMU 9, the retort loadout area, in March 1996. The results of investigations indicated that TPH compounds above MTCA Method A industrial soil cleanup level were present in surface soils. Carcinogenic PAH compounds were also present in surface soil above MTCA industrial soil cleanup levels. Approximately 205 tons of soil were excavated from the retort loadout area in November 1996 and hauled offsite to ChemWaste Management Northwest, a RCRA-permitted hazardous waste landfill in Arlington, Oregon. Verification samples were collected from the excavation areas and analyzed for total recoverable petroleum hydrocarbons (TRPH) by Ecology Method WTPH-418.1 and PAH compounds by Method 8270 SIM. The concentrations of TRPH compounds in the verification samples were all less than 50 mg/kg. The individual concentrations of cPAH compounds were below the MTCA Method C industrial soil cleanup levels for those compounds.

In a consent decree filed August 18, 1997, Ecology determined that the following SWMUs and AOCs in the non-TWP area identified in the 1991 RFA report require no further investigation or implementation of remedial measures: SWMU 2 (Long Bell Cabinet Ditch), SWMU 3 (Infiltration Trench), SWMU 4 (Ditch 2), SWMU 6 (Site C), SWMU 7 (Wood Pulp Discharge Area), SWMU 8 (Drum Burial Area), SWMU 9 (Retort Loadout Area), SWMU 10 (Poleyard), SWMU 19 (Pipe from API Separator to Recovery Pond 1), SWMU 20 (Pipe from Recovery Pond 1 to Recovery Pond 2), SWMU 23 (Drum Storage Area 1), SWMU 24 (Drum Storage Area 2), SWMU 25 (Cabinet Factory Solvent Storage Area), SWMU 26 (Cabinet Factory Cleanup Temporary Storage), SWMU 27 (Storage Tanks), SWMU 29 (Elevated Diesel Fuel Tank), SWMU 30 (Solvent Tanks), SWMU 32 (Plywood Treatment Area), SWMU 33 (Flakeboard Plant), SWMU 34 (Cabinet Factory), MIBK Tank, and Maintenance Shop (3.5 acre parcel).

#### References:

- ***RCRA Facility Assessment Preliminary Review, International Paper Company, Longview, Washington, EPA I.D. No WAD010745917; May 1991***
- ***International Paper Company, MIBK Tank Closure and Site Assessment, Longview, Washington; March 14, 1994***
- ***Data Report, Solvent Tank Area (SWMU 30), International Paper, Longview, Washington Facility; August 1996***
- ***Data Report, Retort Loadout Area (SWMU 9) and Poleyard (SWMU 10), International Paper, Longview, Washington Facility; August 1996***
- ***Investigation of Poleyard (SWMU 10) , International Paper, Longview, Washington Facility; October 1996***
- ***Investigation and Remediation of Area of Concern (AOC) 23 at the International Paper, Longview, Washington Facility; January 1997***
- ***Investigation and Remediation of the Solvent Tank Area (SWMU 30) at the International Paper Company Facility, Longview, Washington; January 1997***
- ***Investigation and Remediation of the Retort Loadout Area (SWMU 9) at the International Paper Company Facility, Longview, Washington; February 1997***
- ***Investigation of Site C (SWMU 6) at the International Paper, Longview, Washington Facility; February 1997***

- Consent Decree No. 972010889 between the State of Washington and International Paper Company, filed in the Superior Court of Cowlitz County; August 18, 1997
- Letter from RueAnn Thomas (International Paper) to Howard Steeley (Department of Ecology); December 23, 1997; response to Ecology's comments in a letter dated April 4, 1997, regarding the report of the investigation of SWMU 6 (Site C)
- Letter from RueAnn Thomas (International Paper) to Howard Steeley (Department of Ecology); December 23, 1997; response to Ecology's comments in a letter dated March 13, 1996 (obviously written and sent March 1997), regarding the report of the investigation and remediation of SWMU 9 (retort loadout area)
- Letter from RueAnn Thomas (International Paper) to Howard Steeley (Department of Ecology); December 23, 1997; response to Ecology's verbal comments, regarding the report of the investigation of SWMU 10 (poleyard area)

Footnotes:

<sup>1</sup> "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<b>“Contaminated” Media</b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	___	___	___	<u>X</u>			___
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	___	___	___	___	___	___	___
Surface Water	___	___	___		___	___	___
Sediment	___	___	___		___	___	___
Soil (subsurface e.g., >2 ft)	___	___	___	<u>X</u>			___
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated”) as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“\_\_\_”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- \_\_\_\_\_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- X If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- \_\_\_\_\_ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

**Rationale and Reference(s):**

Residences: There are no residential areas at the facility or immediately adjacent to the facility.

Workers: Workers at the facility are not exposed to groundwater or to contaminated subsurface soils that have not been covered or from areas where the cover has been removed for site remediation.

Day care: There are no known day care businesses at the facility or nearby.

Construction: Construction activities at SWMU 6 (Site C) may expose workers to contaminants in groundwater and subsurface soils.

Trespassers: Entrance to the facility is controlled by the Port of Longview and other property owners. While there is a chance that trespassers may gain access to the facility, this institutional control satisfactorily interrupts this pathway.

Recreation: There are no recreation activities at the facility. Recreational use of nearby waterways is present, but there is no evidence that contaminated groundwater reaches nearby waterways.

Food: There may be some subsistence and other fishing or food collection activities in and along nearby

waterways, but there is no evidence that contaminated groundwater reaches nearby waterways.

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**<sup>4</sup> (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

**X** If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

The deed restriction (AKA the restrictive covenant) for SWMU 6 (Site C) requires the owner or successor owners of the property to alter or modify the property in any way that may result in a release or exposure of contaminants in a manner that presents a threat to human health or the environment. Groundwater use for any purpose, including domestic, agricultural, commercial, or industrial, is prohibited.

<sup>4</sup> If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.



**Current Human Exposures Under Control**  
**Environmental Indicator (EI) RCRIS code (CA725)**  
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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

- YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the International Paper facility, Non-Treated Wood Products (TWP) area, EPA ID # WAD 010745917, located at 10 International Way, Longview, Washington, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
- NO - "Current Human Exposures" are NOT "Under Control."
- IN - More information is needed to make a determination.

Completed by \_\_\_\_\_ Date \_\_\_\_\_  
Kaia Petersen  
Hydrogeologist

Supervisor \_\_\_\_\_ Date \_\_\_\_\_  
K Seiler  
Supervisor, Hazardous Waste and Toxics Reduction Section  
Washington State Department of Ecology, Southwest Region

Locations where References may be found:

Central files at the Department of Ecology's Southwest Regional Office, 300 Desmond Drive,  
Lacey, Washington

Contact telephone and e-mail numbers

Kaia Petersen  
(360) 407-6359  
kpet461@ecy.wa.gov

**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA750)  
Migration of Contaminated Groundwater Under Control**

**Facility Name:** International Paper Company, Non-Treated Wood Products (TWP) Area  
**Facility Address:** 10 International Way, Longview, Washington  
**Facility EPA ID #:** WAD 010745917

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

**X** If yes - check here and continue with #2 below.

If no - re-evaluate existing data, or

if data are not available, skip to #8 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Migration of Contaminated Groundwater Under Control" EI**

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains **ONLY** to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database **ONLY** as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be “**contaminated**”<sup>1</sup> above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

**X** If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s): The former International Paper facility was located on the north side of the Columbia River, approximately 66 miles upriver from the Pacific Ocean. The former facility is located less than two miles downstream of the confluence of the Columbia and Cowlitz rivers. The former facility lies within the 100-year floodplain but is protected by control levees.

International Paper operated a wood treatment facility at this location from 1956 to 1983. The Treated Wood Product (TWP) area, the site of the former wood treatment operation at the former southwestern corner of the International Paper facility, encompassed the retort building, associated structures (e.g., tanks, sheds, water treatment facilities, and the locations of former Ponds 1 and 2). The original International Paper facility was approximately 900 acres. The former TWP area consists of approximately 4 acres; the rest of the original International Paper facility is called the non-TWP area and includes a number of solid waste management units (SWMUs) and areas of concern (AOCs) identified in the 1991 RCRA facility assessment (RFA) report.

SWMU 6 (Site C) is the only SWMU in the non-TWP area investigated for groundwater contamination. Site C is located at the eastern edge of the former International Paper facility and was reportedly used for the disposal of various wastes and liquids. International Paper investigated Site C in October 1996. The investigation determined that there were residual concentrations of carcinogenic polycyclic aromatic hydrocarbon (cPAH) compounds, pentachlorophenol, bis(2-ethylhexyl)phthalate, arsenic, barium, and copper in soil at concentrations exceeding MTCA residential groundwater protection standards. Levels of arsenic and bis(2-ethylhexyl)phthalate in groundwater exceeded MTCA residential groundwater standards. Based on the results of that investigation and subsequent groundwater modeling that indicated that MTCA residential groundwater standards would not be exceeded at the boundary of Site C, Ecology determined that a deed restriction was required to prohibit extraction of groundwater in the vicinity of Site C. The deed restriction was filed with the Cowlitz County auditor in February 2000.

In a consent decree filed August 18, 1997, Ecology determined that the following SWMUs and AOCs in the non-TWP area identified in the 1991 RFA report require no further investigation or implementation of remedial measures: SWMU 2 (Long Bell Cabinet Ditch), SWMU 3 (Infiltration Trench), SWMU 4 (Ditch 2), SWMU 6 (Site C), SWMU 7 (Wood Pulp Discharge Area), SWMU 8 (Drum Burial Area), SWMU 9 (Retort Loadout Area), SWMU 10 (Poleyard), SWMU 19 (Pipe from API Separator to Recovery Pond 1), SWMU 20 (Pipe from Recovery Pond 1 to Recovery Pond 2), SWMU 23 (Drum Storage Area 1), SWMU 24 (Drum Storage Area 2), SWMU 25 (Cabinet Factory Solvent Storage Area), SWMU 26 (Cabinet Factory Cleanup Temporary Storage), SWMU 27 (Storage Tanks), SWMU 29 (Elevated Diesel Fuel Tank), SWMU 30 (Solvent Tanks), SWMU 32 (Plywood Treatment Area), SWMU 33 (Flakeboard Plant), SWMU 34 (Cabinet Factory), MIBK Tank, and Maintenance Shop (3.5 acre parcel).

References:

- ***RCRA Facility Assessment Preliminary Review, International Paper Company, Longview, Washington, EPA I.D. No WAD010745917; May 1991***
- ***Investigation of Site C (SWMU 6) at the International Paper, Longview, Washington Facility; February 1997***
- Consent Decree No. 972010889 between the State of Washington and International Paper Company, filed in the Superior Court of Cowlitz County; August 18, 1997
- Letter from RueAnn Thomas (International Paper) to Howard Steeley (Department of Ecology); December 23, 1997; response to Ecology's comments in a letter dated April 4, 1997, regarding the report of the investigation of SWMU 6 (Site C)

Footnotes:

<sup>1</sup>“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”<sup>2</sup> as defined by the monitoring locations designated at the time of this determination)?

If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the “existing area of groundwater contamination”<sup>2</sup>).

If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the “existing area of groundwater contamination”<sup>2</sup>) - skip to #8 and enter “NO” status code, after providing an explanation.

If unknown - skip to #8 and enter “IN” status code.

**Rationale and Reference(s):** Based on the results of that investigation and subsequent groundwater modeling that indicated that MTCA residential groundwater standards would not be exceeded at the boundary of Site C, Ecology determined that a deed restriction was required to prohibit extraction of groundwater in the vicinity of Site C. The deed restriction was filed with the Cowlitz County auditor in February 2000.

<sup>2</sup> “existing area of contaminated groundwater” is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of “contamination” that can and will be sampled/tested in the future to physically verify that all “contaminated” groundwater remains within this area, and that the further migration of “contaminated” groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does “contaminated” groundwater **discharge** into **surface water** bodies?

\_\_\_\_\_ If yes - continue after identifying potentially affected surface water bodies.

  X   If no - skip to #7 (and enter a “YE” status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater “contamination” does not enter surface water bodies.

\_\_\_\_\_ If unknown - skip to #8 and enter “IN” status code.

**Rationale and Reference(s):** Groundwater modeling conducted after the investigation of Site C indicated that MTCA residential groundwater standards would not be exceeded at the boundary of Site C. (See: Letter from RueAnn Thomas (International Paper) to Howard Steeley (Department of Ecology); December 23, 1997; response to Ecology’s comments in a letter dated April 4, 1997, regarding the report of the investigation of Site C.)



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<sup>3</sup> As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.



water bodies.

<sup>5</sup> The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.





**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

**YE** - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the International Paper facility, Non-Treated Wood Products Area , EPA ID # WAD 010745917, located at 10 International Way, Longview, Washington. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

**NO** - Unacceptable migration of contaminated groundwater is observed or expected.

**IN** - More information is needed to make a determination.

Completed by \_\_\_\_\_ Date \_\_\_\_\_  
Kaia Petersen  
Hydrogeologist

Supervisor \_\_\_\_\_ Date \_\_\_\_\_  
K Seiler  
Supervisor, Hazardous Waste and Toxics Reduction Section  
Washington State Department of Ecology, Southwest Region

Locations where References may be found:

Central files at the Department of Ecology's Southwest Regional Office, 300 Desmond Drive,  
Lacey, Washington

Contact telephone and e-mail numbers

Kaia Petersen  
(360) 407-6359  
kpet461@ecy.wa.gov